In the Claims:

Please amend the claims as indicated below:

[0035] 1. (currently amended) A system for ~~processing a thumbnail image from a microscopic slide to determine tissue~~ determining a specimen locations on ~~the~~ a slide and capturing an image of that location, the system ~~comprises~~ comprising:

a camera taking a low resolution image of the slide;

a ~~plurality of~~ first components for identifying ~~tissue~~ a regions ~~and determining locations of tissue on the slide~~ of the low resolution image containing the specimen;

~~a motorized stage where a frame image containing the entire slide is taken with a camera;~~ and

~~means for using information about the locations~~ an image capture component to generate control parameters to control movement of a ~~for the~~ motorized stage and operation of the camera to capture an image of only the identified region through microscopic optics ~~to ensure that a scanning process captures high quality images of only the tissue regions~~.

[0036] 2. (currently amended) The system of claim 1, wherein the ~~plurality of~~ first components further comprises: ~~include~~

an image cropping component for ~~identifying tissue regions on the slide to be scanned, wherein the image cropping component: determines~~ determining an ~~approximate~~ location of a slide boundary by searching upper and lower intervals corresponding to boundary regions expected to contain upper and lower edges of the slide~~;~~

~~re-examines the approximate location to determine a more accurate location;~~ and

~~removes~~ cropping portions of the image falling outside of the determined slide boundary.

[0037] 3. (currently amended) The system of claim ~~2~~ 1, further comprising converting ~~wherein the image cropping component converts~~ a copy of the ~~thumbnail~~ low resolution image to a grayscale image.

[0038] 4. (currently amended) The system of claim 2, wherein the low resolution image is a color image and the image cropping component crops ~~a~~ the color ~~thumbnail~~ image at ~~estimated edge locations~~ the slide boundary~~, wherein multiple values of each pixel in the color thumbnail image are used to achieve better results by identifying spurious features on the slide~~.

[0039] 5. (currently amended) The system of claim [[4]] 2, wherein the image cropping component ~~crops the color thumbnail image at estimated boundary locations and uniformly~~ reduces the ~~color thumbnail~~ low resolution image size to produce a small thumbnail image of the ~~slide~~ specimen for rapid visual ~~slide~~ identification.

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[0040] 6. (currently amended) The system of claim ~~3~~ 2, wherein the image cropping component identifies pixel blocks in the cropped image that are likely to contain remaining slide edge features ~~boundary edges~~ and flags these blocks as edges that should not be considered for high-resolution imaging.

[0041] 7. (currently amended) The system of claim 1, wherein the ~~plurality of~~ first components includes a tissue finding component that locates regions in the low resolution ~~thumbnail~~ image that contain tissue of interest ~~to a specialist~~.

[0042] 8. (currently amended) The system of claim ~~7~~ 1, wherein ~~a cropped grayscale~~ the low resolution image is inputted into ~~the~~ a tissue finding component ~~from a imaging cropping component~~, and wherein the tissue finding component identifies one or more tissue regions in the low resolution image by applying a ~~sequence of~~ filters that incorporates knowledge of typical appearance and location of tissue and non-tissue slide regions and outputs a ~~tiling~~ matrix ~~whose~~ having values that indicate which slide regions are of interest ~~tiles should be imaged~~.

[0043] 9. (currently amended) The system of claim 8, wherein ~~a first~~ the filter converts a copy of the low resolution image to grayscale and analyzes at least one of mean and standard deviation of local pixel intensities ~~and combines the mean and the standard deviation~~ in the grayscale image to generate a threshold value for ~~making an initial classification of~~ classifying tissue versus non-tissue regions.

[0044] 10. (withdrawn) The system of claim 9, wherein the intensities are used to differentiate tissue-containing regions from blank regions and other non-tissue containing regions.

[0045] 11. (currently amended) The system of claim 9, wherein the standard deviation represents the amount of variation in pixel ~~values~~ intensity and is a good indicator of the border between tissue regions and ~~the~~ blank regions of the slide.

[0046] 12. (currently amended) The system of claim 8, wherein a morphological filters ~~are~~ is applied to the matrix ~~threshold standard deviation data to refine classification based on size and position of neighboring groups of potential tissue pixels, wherein the morphological filters process pixels of the grayscale image in groups that correspond~~ to identify slide regions that can be imaged individually during a high-resolution ~~scanning~~ imaging process.

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[0047] 13. (currently amended) The system of claim 12, wherein the morphological filters ensures that tiles that ~~partially filled with~~ contain both tissue and non-tissue pixels are classified as tissue-containing tiles.

[0048] 14. (withdrawn) The system of claim 8, wherein other image characteristics can be used to identify tissue from non-items of interest.

[0049] 15. (currently amended) The system of claim 1, wherein the ~~frame~~ low resolution image is taken as a single ~~macroscopic~~ image.

[0050] 16. (currently amended) The system of claim 1, wherein the ~~frame~~ low resolution image is taken as multiple ~~macroscopic~~ images.

[0051] 17. (currently amended) The system of claim 1, wherein the ~~plurality of~~ first components includes an image capture ~~scan~~ control component that interprets the identified regions ~~a tile matrix, outputted by a find tissue component, and transposes positions of the tile matrix~~ into actual stage coordinates for ~~a~~ microscopic imaging.

[0052] 18. (currently amended) A method for processing a low resolution ~~thumbnail~~ image from a ~~microscope~~ slide to determine ~~tissue~~ a specimen locations on the slide, the

method ~~comprises the steps of~~ comprising:

~~flat-field correcting the thumbnail image using a blank slide and a similar image obtained from a camera that captured the thumbnail image;~~

cropping the low resolution ~~thumbnail~~ image ~~by an image cropping component~~ to remove portions of the low resolution image that correspond to non-slide objects;

inputting ~~a~~ the cropped ~~grayscale~~ image into a tissue finding component, wherein the tissue finding component identifies ~~tissue~~ a regions containing the specimen by applying a ~~sequence of~~ filters that incorporates knowledge of typical appearance and location of ~~tissue~~ specimen and ~~non-tissue~~ non-specimen slide regions and outputs a ~~tiling~~ matrix whose values indicate which ~~tiles~~ regions of the slide should be imaged; and

~~interpreting the tiling matrix, by a scan control component, and~~ transposing positions of the ~~tiling~~ matrix into actual stage coordinates, and capturing ~~for~~ a microscopic image at those stage coordinates.

[0053] 19. (currently amended) The method of claim 18, wherein the ~~step of~~ cropping further comprises ~~the steps of~~:

determining ~~an approximate~~ location of a slide boundary by searching upper and lower intervals corresponding to boundary regions expected to contain upper and lower edges of the slide;

~~re-examining the approximate location to determine a more accurate location;~~ and

~~removing~~ not including in the matrix portions of the image falling outside of the determined slide boundary.

[0054] 20. (currently amended) The method of claim 18, further comprising ~~the step of~~ converting a copy of the low resolution ~~thumbnail~~ image to a grayscale image.

[0055] 21. (currently amended) The method of claim 19, wherein the low resolution image is a color image, further comprising ~~the step of~~ cropping ~~a~~ the color low resolution ~~thumbnail~~ image at the slide boundary ~~estimated edge locations, wherein multiple values of each pixel~~

~~in the color thumbnail image are used to achieve better results by identifying spurious features on the slide~~.

[0056] 22. (currently amended) The method of claim 219, further comprising ~~the step of cropping the color thumbnail image at estimated boundary locations and uniformly~~ reducing the color ~~thumbnail~~ image size to produce a small thumbnail image of the ~~slide~~ specimen for rapid visual ~~slide~~ identification.

[0057] 23. (currently amended) The method of claim 18 ~~20~~, further comprising ~~the steps of~~ identifying pixel blocks in the cropped image that are likely to contain remaining slide edge features ~~boundary edges~~; and

flagging these features ~~blocks~~ as edges that should not be considered for high resolution imaging.

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[0058] 24. (currently amended) The method of claim 18, further comprising: ~~the steps of~~

converting a copy of the low resolution image to grayscale; and

analyzing at least one of mean and standard deviation of local pixel intensities ~~and combining the mean and the standard deviation~~ to generate a threshold value.

[0058] 25. (currently amended) The method of claim 24, further comprising ~~the step of~~ using the pixel intensity ~~intensities~~ to differentiate tissue-containing regions from blank regions and other non-tissue containing regions.

[0060] 26. (currently amended) The method of claim 18, further comprising ~~the step of~~ applying a morphological filters to the matrix ~~threshold standard deviation data to refine classification based on size and position of neighboring groups of potential tissue pixels, whereby the morphological filters process pixels of the cropped grayscale image in groups that correspond~~ to identify slide regions that can be imaged individually during a high-resolution imaging ~~scanning~~ process.

[0061] 27. (currently amended) A system for processing a low resolution ~~thumbnail~~ image from a microscope slide to determine tissue locations on the slide, the system ~~comprises~~ comprising:

a camera taking the low resolution image from the slide;

an image cropping component for cropping non-slide objects in the low resolution

~~thumbnail~~ image;

a tissue finding component that identifies a region containing a tissue ~~regions~~ in the low resolution image by applying a sequence of filters that incorporate knowledge of typical appearance and location of tissue and non-tissue slide regions and outputs a ~~tiling~~ matrix whose values indicate which ~~tiles~~ portions of the low resolution image should be imaged;

a scan control component for interpreting the ~~tiling~~ matrix; and

means for inputting a cropped image from the image cropping component into the tissue finding component and for transposing positions of the ~~tiling~~ matrix into actual stage coordinates~~, by the scan control component,~~ for ~~a~~ microscopic imaging.

Please add claims 28-32 as follows:

28. (new) The system of claim 1, wherein the low resolution image is taken automatically without human intervention, the specimen containing region is identified automatically without human intervention, and the control parameters are generated automatically without human intervention.

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29. (new) The method of claim 1, wherein the components are software components executed by a computer.

30. (new) The method of claim 18, wherein the low resolution image is taken automatically without human intervention, the low resolution image is cropped automatically without human intervention, the specimen containing region is identified automatically without human intervention, and the positions of the matrix are transposed automatically without human intervention.

cont'd

31. (new) The method of claim 18, further comprising flat-field correcting the image using a blank slide image to remove anomalies from the low resolution image.

32. (new) The method of claim 18, wherein the components are software components executed by a computer.